Educating the Gifted

Summary

Planning Services

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Devonian Building, West Tower, 11160 Jasper Avenue, Edmonton, Alberta, Canada T5K 0L2

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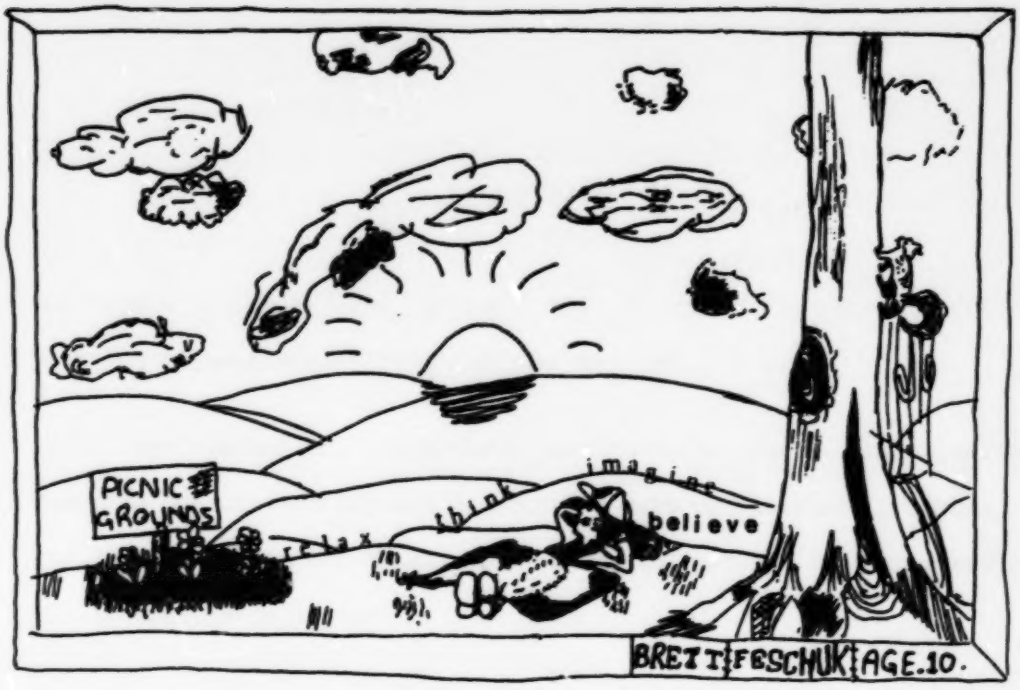
TO THE READER:

The Planning Services Branch is pleased to make the attached report available. Educating the Gifted is a comprehensive report of an extensive survey of the literature and of practice pertaining to this important topic. We are confident that this publication will be of considerable interest to many readers.

This report is being widely disseminated. Copies of the summary version are being sent to all schools in Alberta. Individual copies of the complete report will be supplied on request while quantities last. Otherwise, copies may be read at Alberta Education libraries in the regional offices.

Yours sincerely

H.I. Hastings
Director
Planning Services



EDUCATING the GIFTED

Summary Report

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THIS REPORT SUPERVISED BY
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ABSTRACT

The study, Educating the Gifted, was conducted by M. Sillito and W. Wilde between August 1981 and February 1983.

Using questionnaires, interviews and on-site visits, the researchers compiled non-statistical and descriptive data on current programs for the gifted throughout Canada and the United States. They also reviewed the literature in depth.

Their report describes numerous aspects of giftedness and educational programs for the gifted. The report contains sections on: the nature of giftedness, historical antecedents and the current setting, the role of visual and performing arts in educating the gifted, identification of the gifted, curriculum models, curriculum development and delivery, teachers and support services, administration and finance and evaluation of students and programs.

The researchers provide appropriate program generalizations and recommendations for procedures to initiate programs for the gifted. They note that there are two major obstacles to the establishment of special educational programs for the gifted:

1. current fiscal restraint of government, and
2. lack of knowledge in many areas including identification and evaluation procedures.

Drs. Sillito and Wilde agree, however, with the many other researchers

who state that the needs of gifted students are badly neglected, and that special programs for the gifted are desirable and productive both for the gifted themselves and for society as a whole.

FOREWORD

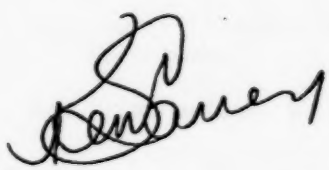
Who are the gifted? As educators, wherever we gather, we are faced with the term. Each person has a different definition or interpretation of what the term means. Some would tell us that special attention given to the gifted and talented might lead to a form of "elitism". Others counter that special attention is required because from this group will come the leaders of tomorrow.

Not much research has been done on the issue, although this is not to say that people have neglected the task of writing opinions on various aspects. More research and/or collating the ideas of writers and practitioners appeared to be the best way to establish firm guidelines for programs.

That is why, several years ago, Medicine Hat School District No. 76 established a committee to investigate the research done thus far, to visit selected programs in operation, and to make recommendations. Fortunately, Alberta Education Planning and Research agreed to fund a research project, using the services of Dr. Warren Wilde and Dr. Mel Sillito, which in turn, tied in with the district's work and resulted in this report.

The report will not answer all of your questions on this most important topic. It can, however, heighten the awareness of what is involved when you talk about gifted and talented students, and how important it is not to neglect this segment of the student population. The models, strategies and practices suggested can be useful steps in developing programs.

The Report on Gifted Education is an important and timely account of where we are and where we might go. I know you'll find it stimulating!



Ken Sauer,
Superintendent of Schools.

ACKNOWLEDGEMENTS

The authors are indebted to the many people who willingly shared their time and expertise in the data collection phase. One of the pleasant surprises throughout our survey and personal interviews was the amiability, enthusiasm and desire to share of those connected with programs for the gifted. Without the cooperation received, especially from those who set up schedules, chauffeured us to schools and gave generously of their materials, this phase of the work would have been an arduous chore rather than the pleasure it became.

We are deeply grateful to the steering committee for their patience, insight and consistently helpful suggestions. We owe a special thanks to Fred Kramer, Assistant Superintendent of Medicine Hat Public School District #76 and chairman of the committee, who set up meetings, met our airplane on numerous occasions, listened to our concerns and became an unfailingly helpful friend.

The committee consisted of:

Mr. Fred Kramer, Chairman, Assistant Superintendent, Medicine Hat Public School District #76,

Dr. Harry Sherk, Associate Director, Planning and Research, Alberta Education,

Mrs. Jacqueline Bishop, Teacher, Medicine Hat Public School District #76,

Mrs. Madeline Fischer, Teacher, Medicine Hat Public School District #76,

Mr. Bill Turko, Supervisor of Curriculum, Medicine Hat Public School District #76,

Dr. Garnet Millar, Consultant, Alberta Education, Lethbridge Regional Office.

We wish to express our appreciation to the support personnel and secretaries who worked diligently in the preparation of the report and patiently bore our requests for longer hours of service. They learned our quirks and deficiencies but nonetheless persevered to the completion of the task.

We are indebted to Jolayne, Judi, Ruth and Garnet for support papers and to Anita for the editing.

Finally, our thanks to the Planning and Research Branch, Alberta Education, and Medicine Hat Public School District #76 for the funding and supervision of this project.

M.T.S.

W.D.W.

TABLE OF CONTENTS

I. The Study 1

Origin of the Study.....1

The Nature of Giftedness.....3

Historical Antecedents and the Current Setting.....7

Visual and Performing Arts in Education of the Gifted.....9

Identification.....11

Curriculum Models, Development and Delivery Systems.....14

Teachers and Support Systems.....20

Administration and Finance.....23

Evaluation.....25

II. Implications of the Study.....29

EDUCATING THE GIFTED

Origin of the Study

This study came about because various individuals in the Planning and Research Branch of Alberta Education and Medicine Hat Public School District #76 were interested, and two interested professional educators were available to conduct the study. Alberta Education wished to have a study to provide background for its own policy development and information for school systems. Medicine Hat School District was interested in both general background and information more specific to establishing a local program. The two educators who conducted the study had developed an interest in studying education for gifted children through their career experiences.

Accordingly, the study was designed to provide: a reference document for Medicine Hat; a useful report for other school districts planning and/or operating special education programs for gifted students; descriptions of selected operating programs with their common as well as exceptional features; and (a substantive additional objective) a synthesis of appropriate generalizations and implications related to all aspects of education programs for gifted students. It was recognized that such a study would require a substantial foundation.

The bases for the 15-month study included: a) an extensive program of visits to state/provincial offices, school systems and schools providing education for gifted students in Canada and the United States, b) an extensive review of the literature, c) attendance at conferences and workshops and d) data from a questionnaire survey of the provinces and from school systems in Alberta.

In Canada, the researchers visited school districts in British Columbia, Ontario and Alberta. In the United States, they visited Minnesota, North Dakota, Washington, Oregon, California, Arizona, Utah, Idaho and Montana. Conferences attended were: the World Council for the Gifted in Montreal, the National Association for the Gifted in New Orleans, the California Association for the Gifted in Sacramento and an institute on the gifted at the National/State Leadership Training Institute for the Gifted and Talented, at Ventura. All of these sources provided valuable information, much of it through first-hand interaction with practicing teachers, administrators and other specialists.

All of these data provided information and suggestions for further reading and research and became the basis for the remaining chapters of the report. The findings are summarized first and the implications of the study are in a section at the end.

The Nature of Giftedness

Although we commonly speak of giftedness as though it were a well defined concept, who is included in the term "the gifted" is by no means clear in educational practice. Lack of consensus about the usage of such terms as intelligence, creativity, leadership and psychomotor ability causes some confusion, but lack of understanding of the concepts themselves causes much more. Although intelligence is the most longstanding and widely known of these concepts or psychological constructs, it is still the focus of controversy. People still do not agree about whether intelligence is innate or acquired and whether it includes creativity. The other newer constructs are even less well defined and less universally acknowledged.

The label "gifted" refers to the idea of exceptionality in one or several of such areas as creativity or productive thinking, leadership ability, cognitive or intellectual ability, psychomotor ability and ability in visual and performing arts, and there is a trend to add more attributes. This is the essence of the definition developed by the United States Office of Education (USOE) which is widely used in North America, (Marland, 1971, p. 3-4).

Gifted and talented children are those identified by professionally qualified persons who by virtue of outstanding abilities, are capable of high performance. These are children who require differentiated educational programs and/or services beyond those normally provided by the regular school program in order to realize their contribution to self and society.

Children capable of high performance include those with demonstrated achievement and/or potential ability in any of the following areas, singly or in combination:

a. general intellectual ability
b. specific academic aptitude
c. creative or productive thinking
d. leadership ability
e. visual and performing arts
f. psychomotor ability

Since instruments used in measuring these exceptionalities are generally weak, and unfortunately weakest at the highest levels where the gifted most often score, individual exceptionalities are not easily identified. Further, there is a growing belief that possessing only one of them is not enough to be classified as gifted. The trend is toward a conviction that creativity, however defined, is as necessary as intelligence and that personal attributes such as commitment and perseverance are also necessary. Although a few experts still hold that one exceptionality is enough and a very few suggest that an exceptionality is merely precocity, the weight of opinion is that the broader concept is more appropriate.

Support for broadening the concept of giftedness comes from <u>brain studies</u>. The two brain hemispheric functions, although apparently not

always distinctly assignable to either the left or right hemisphere, are differing functions and they both require development. While all students need this development, it is especially important for gifted students. To development of the left hemispheric linear, logical, sequential function, which is the traditional role of the schools, must be added development of the holistic, metaphoric, creative or right hemispheric function -- if the students are to achieve their full potential.

In addition to hemispheric brain specialization, the growth of the brain has further implications. Brain growth involves periods of rapid increase in size alternating with plateaus. In the prenatal period the greatest increase occurs during the last three months. During the first year-and-a-half after birth the brain doubles in size and achieves two-thirds of its maximum size. (The maximum is reached at about age 16.) The plateaus are thought to be periods in which newly acquired growth is "educated"; for example, the brain develops language skills. This spurt and plateau pattern of growth suggests a physiological basis for the various developmental stage theories of Piaget, Erikson and Gowan. Studies also show that environmental factors affect function development and even size of the brain. Nutrition, stimulation and affection are such factors.

Five models illustrate how the concept of giftedness has grown in inclusiveness and complexity. The earliest model, by Terman, is based on high cognitive ability while the most recent model, by the New York

State University (McNeill) uses intelligence as only one of the three basic requirements for giftedness. The others are creativity and personal characteristics such as motivation, initiative, self-direction and persistence. The New York University model leaves open which combination of these three attributes will combine to produce a particular kind of giftedness.

Conclusions. The concept of giftedness is evolving in at least three discernible ways:

1. Both in the literature and in practice there is a broadening and diversification in the concept of giftedness, including but not restricted to the classical academic gifts. There is convergence toward the point of view that gifts are unusual and valuable contributions of individuals and the gifted are those who are either actually or potentially capable of exceptional products which are highly valuable to the individual and/or to society.

2. There is an obvious trend to include more and more attributes in which a degree of exceptionality is necessary before an individual is considered gifted.

3. There is a growing conviction that most, if not all, of the attributes of importance in a gifted individual are developmental in nature and susceptible to the influences of the child's environment, and hence educable.

This evolution is fueled by practical experience and research. Public programs for the gifted raise expectations beyond the academic areas of giftedness. These expectations are fed by politically established broader definitions such as that of the United States Office of Education.

Historical Antecedents and the Current Setting

History shows that catering to the gifted and developing their special talents is not a recent phenomenon. Ancient civilizations trained exceptional boys for state service - Sparta for war, and China and Turkey for government service. Europe's schools for the elite served similar functions previous to World War II.

Since the mid-twentieth century more emphasis has been placed on universal education, both in Europe and North America. Nevertheless, during the past 20 years many new programs for the gifted have been established in the United States, some say in response to the Russian's first penetration of space in 1957, with Sputnik I. Certainly an infusion of funds and leadership through the United States Office of Education has been a factor since 1970. The current recession may cause a slowing down but probably not the elimination of well established programs.

In Canada programs for the gifted have existed for some time but are less numerous because they have not had the benefit of special provincial or federal incentives.

One of the most recent efforts of national scope has occurred in Venezuela. The government has undertaken a massive project specifically aimed at improving the intelligence of all its people. A number of Third World countries are following this example to some extent.

Studies of education for the gifted have also increased rapidly over the past decade. Previous to that, Terman's study of the highly intelligent (1947), which served to remove some of the misconceptions and may have stimulated some early programs, was the only major source of information.

A study of mathematically precocious youth by Julian Stanley has exposed the need for a broader base of identification in academic precocity, and other studies have shown the need for adding creativity and personal characteristics to the definition of giftedness. Personal traits are a recent addition to the concept of giftedness. They have not yet been operationally defined nor, of course, measured. However, it is already apparent that a high degree of exceptionality in this component can redress some lower degree of cognitive or creative ability. The value of high motivation is apparent but the implications for education are largely unexplored. Are the desirable traits capable of development, as is widely believed, and are their development a responsibility to be shared by the school? What combination of personal characteristics are needed for a specific kind of giftedness? Studies supportive of the interactive model of intellectual development and the trainability of creativity raise very basic questions in these areas also.

Research in the form of reporting of prototype programs and their evaluation has also proliferated. One reason for the increased volume of research is the requirement that reports must be provided when public funds are used. Additional research is also being undertaken at the state and local levels, and universities are introducing graduate programs in education of the gifted. The result is a lot of literature!

Relevant information is also coming from fields other than education. Psychological and physiological studies of the brain, study of the effects on the brain of nutrition and drugs, the relationship of physiological stages to mental development stages, the effects of environment on learning and even parapsychological studies are contributing information of value in understanding and educating gifted students.

Visual and Performing Arts in Education of the Gifted

Educators tend to think of the role of the arts in education for gifted students as specific provisions for those who have gifts, or potential gifts, in art, music or drama. This role is of course essential for some students. However, the arts have a much larger place in education for the gifted and in fact for all students. Study of the arts can expand thinking and communicating skills and improve brain function (that is, increase the use of right hemisphere functions like creativity and intuition). Inclusion of the arts in education can help all students to realize their full personal and mental potential. An indirect benefit of arts programs in schools has been found as well-- morale climbs and students feel better about themselves and their schools.

Visual and performing arts education is important for every student, but even more so for gifted students. For gifted students, the arts can be effective in providing enriching stimulation to both hemispheres of the brain. They can provide complementary ways of relating to reality and an opportunity for developing several modes of creative expression.

Drama, a relative latecomer in the curriculum, may become a winner. Its capacity to accommodate diversity in kinds and levels of skills in a classroom suggest that it will have the possibility of integration across ability groups, age groups and subject interests. This flexibility should permit its use as a strategy for educating gifted students even before criteria for identifying the specifically arts gifted are developed.

For those whose gifts are specific to the arts, the picture is less clear. It is not in the area of identification that the outlook is cloudy, although identification strategies range from subjective to non-existent, but in provision of staff, time and facilities. There are some programs of high quality with expert teachers and some facilities, but none of the above exist to the extent needed. Possibly the schools cannot provide.

There are too few especially gifted in the arts scattered among the various specializations. This lack of numbers may pose acute problems.

Identification

Identification of the gifted involves detecting the existence of, or potential for development of, certain extraordinary traits such as unusual ability in productive thinking (creativity), intellectual faculties, leadership and decision making, psychomotor skills or artistic performance. Theoretical constructs and models have been developed in an effort to better understand the concept. In most cases the identification process is carried on through a system of observations in real and/or contrived situations. The real situations for identifying the gifted are valid and the results reliable, whereas contrived situations including tests are less so.

There are two general strategies in use. The first is to establish and legitimize a definition of the gifted and then to set up an identification process which will operationalize the definition. The second strategy, a reversal of the first, is to use an identification process and from observation and working with those identified discover the charcteristics of the gifted. The first strategy is much more common than the second and the two are not mutually exclusive. An example of the first strategy is the very common American practice of using the United States Office of Education definition (Marland) and then finding processes which identify exceptional ability in one or more of the six categories that this definition mentions.

An example of the second strategy is Renzulli's Enrichment Triad Model adapted for identification purposes. The triad is an enrichment

programming model with three types of activities. Type I activities are those designed to develop skills and knowledge useful for every student. Type II activities develop research, analytic and synthesis skills useful for exceptional students and explore areas of knowledge and activity which may be of interest to gifted students. Type III activities consist of "Individual and Small Group Investigations of Real Problems." The model becomes a selection process when teacher and student cooperatively assess student readiness for a "real problem" and identify appropriate resources and methods. When the project is complete the student engages in another project or returns to the enrichment Type I or II activities from which, at some later time, another Type III activity may be undertaken. Students demonstrate their giftedness in Type III activities; those students who successfully engage in Type III activities are "gifted" and their salient characteristics identify the gifted.

In the more common strategy using the United States Office of Education definition, a number of subgroups of gifted students are left out. If the definition is narrowed by deliberate choice to fewer than the six categories, gifted underachievers may be overlooked. The gifted among cultural minorities are often missed because of language barriers or differing value systems. Preschool children are seldom screened.

Programs for gifted students almost always use multiple criteria to select their students. In most cases where public funds are used, there are requirements that the selection process be broader than a single

instrument or process. Several instruments and procedures are required because of the inadequacy of test instruments as screening procedures, especially for gifted students. Checklists, rating scales and assessment of student products are in common use along with the various achievement and intelligence tests. A substantial degree of subjectivity is common in applying both criteria and processes; subjective assessment appears to be necessary and even desirable.

Selection procedures include an initial screening process and a final selection process, and sometimes a special cases review and appeal procedures. Initial screening and final selection processes are universal and almost always formalized. School districts usually develop a large pool of candidates from which the final selection is made. The pool includes students nominated by teachers, administrators, specialists, peers and sometimes by themselves. Test results and observation of student behaviors and products are the usual basis for the nominations. Final selection is made by professionals or committees of professionals, with additional lay persons added surprisingly often. In most school systems a number of criteria are weighted and then summed to produce an index number for each student.

The number of gifted is generally set at between 2 and 5% of the student population. It is an important point that the United States Office of Education "conservative" estimate of 3% is an <u>estimate</u>. The very distinct impression persists that the percentages served are determined more on the basis of funding considerations than on hard evidence that

these percentages accurately define the population for which special programs are required in order that the students in that segment "realize their contribution to self and to society".*

The accuracy of identification and the appropriateness of procedures used in American programs have been questioned in a 1981 survey (Alvino, McDonnel and Richert). The need for guidelines in evaluation is underscored by research showing that group tests miss over half of the cognitively gifted and teachers' observations miss even more. The gifted in other areas are even less likely to be identified. Guidelines should address the definition process, availability of expert assistance, administrative procedures, timing of identification and process and feedback provisions.

Curriculum Models, Development and Delivery

Foundations of Curriculum. There is an assumption that gifted students need a curriculum which is different ("qualitatively differentiated" is the term commonly used). "Qualitatively differentiated" curriculum differs in content as well as in the level of materials presented and the degree of mastery expected. The choice of differentiated curricula for gifted students is based on the almost universal conviction among those involved that gifted students think in ways that are qualitatively different, or perhaps in ways so precocious that they constitute qualitative differentiation.

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* United States Office of Education definition of gifted and talented children.

Three aspects of curriculum construction are: a) educational approaches for the gifted and talented (enrichment, acceleration, talentization, integration), b) curricular emphases (exploratory skills, process skills, expressive skills) and c) learning environments (conventional classroom, extended classroom, resource room, magnet centre, school within a school, gifted school).

The various models used to explain the nature of giftedness each have some implications for developing appropriate curriculum. A model by Mary Meeker, based on Guilford's Structure of the Intellect (SOI), proposes individual curriculum prescriptions based on diagnosis of student needs. This model appears to be used as an adjunct to curriculum planning rather than as the complete program.

The taxonomies of Bloom and Krathwohl are standard foundation blocks of curriculum building. In the upper levels of these taxonomies are found objectives which gifted students can achieve earlier and more readily than students in the regular programs. Similarly Maslow's statement of a hierarchy of needs has special relevance. The need for self-actualization is earlier and more urgent in the gifted. Organized educational systems all too often tend to obstruct and prohibit this self-actualization; hence the truly gifted often experience great frustration with school.

Jeanne Delp notes from her experience in educating gifted students that giftedness makes a number of demands on gifted individuals, their behavior results from these demands, and there are curricular implications

stemming from the demands. A few of the 26 demands will illustrate.

1. A craving for knowledge...

2. To seek an unusual or unique approach to assignments...

3. To question generalizations...

4. To concentrate, to become totally absorbed...

5. To be sensitive to honor and truth...

6. To resist routine [and] drill...

7. To seek mental peers...

8. To have time for thinking... solitude...

9. To pursue a learning pace of his own.

The gifted child needs extra encouragement to use a variety of modalities (visual, auditory, kinesthetic, tactile) to enrich his/her environment and prevent dysfunctional compensation. It has occasionally happened that a gifted child with a very superior memory and preference for auditory learning fails to learn to read until later grades.

Increasing attention is being paid to two aspects of brain function, both of which affect curriculum for gifted students. First is the so-called triune brain and its effect in biasing learning. An understanding of this essentially chemical control of cortical functioning is leading to development of new environments for learning. In these there

is a conscious attempt to eliminate the overt or implicit threats which are currently used to reinforce rote learning. Brain hemispheric functioning also has a major impact on curriculum content and activities. Curriculum should be designed to develop both the right hemispheric and left hemispheric functions because both the linear/logical/sequential and the holistic/metaphoric modes are necessary to effective development of higher order levels of creative and convergent thinking skills.

Curriculum Development and Delivery Systems. Curriculum development for the gifted population presents special challenges. The core curriculum must be addressed and at the same time the challenge of the gifted must be met. This is difficult because of the great individual diversity of gifted children. Since so much can be done with gifted students, curriculum choices are difficult. A coherent and consistent curriculum is needed to enable gifted students to become independent learners, decision-makers, thinkers and communicators. It is even more important that gifted children be thought of as individuals than it is for students in the regular program.

Pressey suggests that there is more to giftedness and talent than genetic or statistical concepts; he believes that these attributes are deliberate consequences of a nurturing environment. He recommends that there be early opportunities for development of skills, continued individual guidance, sustained practice, association with competent persons and recognition in accordance with achievement. Pressey found

that exceptional persons of recognized competence had all experienced one or more of the following:

1. excellent and early opportunity for abilities to emerge and to be encouraged by family and friends,

2. access to early and continuing guidance and instruction,

3. opportunity for regular and sustained guidance as well as for individual pacing,

4. participation in close association with other performers that formed the basis of a continuing stimulation, and

5. stimulation by frequent and increasingly strong success opportunities for success.

Curriculum builders all seek to make learning a challenge by using exciting, original and appropriate activities, but each has been particulary careful to include a basic core of content and skill which is appropriate for all learners. Renzulli proposes a model that is appropriate for a large high-achieving segment of the student population because he feels that the curriculum should be enhanced for all students. The final phase of this model is labelled <u>individual and small group investigations of real problems</u>. In this phase the child becomes an actual investigator of a real problem and is taught to use appropriate processes. The teacher facilitates the investigation by: a) helping the student translate an area of general concern into a researchable

project, b) suggesting methodological techniques, and c) helping the student communicate the results. The whole process is seen as an approach to real-life problems and solutions. Other models focus on creative problem solving and student products. Concern for values, ethics and decision making are introduced, where the gifted are encouraged to look at far-reaching alternatives and implications.

At the secondary level, more than at the elementary level, is noted the use of community resources such as public libraries, specialized libraries (including archives, university, government) private industries and knowledgeable people. Mentorship programs are more common in secondary schools in which individuals are allowed to study with an expert in a field, such as a corporate president or artisan. Community workers such as social workers, local artists and performers and others may aid students with various productions and thus help to provide a feeling of success and enthusiasm for independent study and learning.

Athletic programs which serve students who have exceptional psychomotor abilities are a feature of most schools but these schools fail to address other aspects of psychomotor abilities.

Integration of gifted students with other students is of concern in special schools and in schools where there are full classrooms for the gifted. In the latter case integration is attended to by providing special opportunities in school productions in drama, music, student government, athletic teams and physical education classes.

Methods of curriculum delivery include one or more or a combination of the following: a) early admission, b) acceleration, c) enrichment, d) pull-out, e) special classes and special schools, f) itinerant teachers, g) special summer programs, h) advanced placement, i) independent study, j) seminars, and k) community sponsors or tutors. Minor modifications are often made to suit local needs and resources. The most popular program strategies in the American experience are the resource room, special classes and use of a teahcher consultant.

Teachers and Support Systems

The special abilities of gifted students -- which may include exceptional cognitive strength, unusual affective attributes, independence and energy -- pose special problems and suggest special teacher attributes. The gifted child may become bored and impatient, even "sassy" and overtly critical when required to wade through a curriculum he/she already knows or when required to wait for slower students to "catch on". The child may be perceived as a "smart alec" or a "show off" when he/she dominates the discussion, uses sophisticated terminology and provides exceptional insights, or recognizes rare relationships. These children can also be perceived as stubborn, unrealistic, socially maladjusted, intolerant, deviant and troublesome. Yet to the teacher who is sensitive to the needs of the gifted, these same children may be creative, idealistic, intellectually superior, enjoyable and stimulating.

Although there is little consensus about desirable teacher characteristics, there is some information from research and from the observation of those involved in educating gifted students. Bishop found that intellectually gifted high school students identified the following characteristics in successful teachers: a) intellectual superiority, b) personal interests and activities that lean toward the intellectual, c) evidence of high achievement in past scholastic endeavors, d) thorough command of subject matter, e) sensitivity to others, f) acceptance of superior students, g) responsible, stimulating, imaginative, businesslike and systematic in their teaching procedures, h) ability to communicate effectively with students, and i) personal interest in students. Others have related student creativity to teacher creativity, aspirational level and intellectual climate. Still others have concluded that teachers of the gifted need abundant energy, self-confidence, a warm and out-going personality, intelligence, patience, and behavior which is not threatening to the students.

Barbara Clark has identified four basic characteristics of effective teachers for the gifted:

1. The teacher has a general frame of reference which emphasizes concern for people rather than things; emphasizes meaning, authenticity and causation; and is concerned with the phenomenological rather than the behavioristic.

2. The teacher has a tendency to perceive other people as able, worthy, friendly, dependable, helpful and internally motivated.

3. The teacher generally perceives himself/herself as able, dependable, wanted, worthy and a part of the group.

4. The teacher is disposed to perceive the teaching task as involving the student, therefore encouraging process and progress in a free atmosphere.

The opinions of other specialists interviewed support these statements and conclude that teachers of the gifted must be spontaneous, supportive, interested in developing student potential, energetic, accepting of all students regardless of peculiarities, interested in student success while maintaining the self-worth of every child, flexible and open to new ideas, openly enthusiastic about learning and committed to excellence.

Selection of teachers is often pragmatic - dictated by considerations of tenure, seniority and falling enrolments in the general student population. Teacher selection needs to be based on curriculum content and program organization. The need demands inservice of high quality, and inservice requires alert and aware supervisors.

Inservice must be of high quality in terms of content, theoretical concerns, practical considerations and effective linking of theory and practice. This training is especially important because very few curricular materials are usable without some, and often extensive, adaptation. Other materials for identification and evaluation are likewise deficient. Conference attendance is a useful inservice activity

as are visits to other operating programs, summer institutes for teachers, workshops and library study if good materials are available. University courses have lagged behind the need. A few American universities have well developed programs and some Canadian universities are increasing offerings to teachers preparing to teach gifted students. The need is for universities to integrate both theoretical structures and practical experiences. The tendency is toward the theoretical where instructors emphasize cognitive models such as Guilford's SOI, Bloom's taxonomy or Piaget's stages of development, not unlike what would be offered to regular psychology classes.

Support personnel include administrators, classroom teachers, psychologists, counsellors, resource specialists and parents. Without exception, inservice education is required for these individuals if they are to provide effective assistance to teachers of the gifted. Without this involvement and commitment, the program will almost certainly encounter difficulties.

Administration and Finance

Differences between Canadian and American school systems suggest some caution in importing American practices into Canada. The major differences are: a) the federal government in the United States gives financial support and imposes some regulation, b) support programs and funding arrangements are provided by the federal and state governments in the United States, while similar provisions do not exist in Canada, c) lay members are widely used at the local district and state levels in

the United States, whereas this practice is much less common in Canada, d) American school superintendents are more involved in school business operations, e) inservice education is regarded more as a teacher responsibility in Canada, f) parents are more directly involved in all aspects of the local programs in the United States, and g) volunteer lay support groups are stronger in the United States.

State funding varied from $0 to $1360 per pupil for a nationwide average of $160 per pupil (Gallagher, 1982). It is estimated that these funds were, on average, matched by Local Education Agencies (school districts) and that the federal government provided 10% of the total cost.

Canadian programs are fewer, have no special grants, involve parents to a markedly lesser extent and, like their American counterparts, are supported by barely adequate inservice. Canada has no federal leadership, and leadership is only beginning at the provincial level. In the United States, inservice education, grants-in-aid, and research and development efforts are rated as the most essential program elements.

An impetus, a local advocate, a source of funding and a receptive and supportive administration seem to be the common combination of factors which result in successful launching of a special program for gifted students. The impetus may be a militant parent, a child in obvious need of special help or a member of the school board. Advocates may be parents, administrators or trustees. The most common one is a dedicated professional. Effective administration requires cooperative efforts from elected and professional administrators. A dependable source of funds is the most important factor in program origin.

The introduction of a program normally involves: a) an assessment of needs, b) development of local system policy complete with a definition, c) development of administrative structure, d) development of an operational definition, e) establishment of identification procedures, f) teacher selection and inservice, g) development of program, h) evaluation procedure specification, i) program implementation, and j) formative feedback arrangements.

An implemented program interfaces with the regular school programs in a number of ways: facilities are shared, regular classroom teachers assist in nominating candidates and may have to adjust to student absences, inservice education for regular teachers must be provided, some curriculum efforts for the gifted can be shared, and evaluation of gifted students must be articulated with the regular school procedures and administrative arrangements made to accommodate yet another program.

A note of caution is that adequate time must be provided for careful program planning and implementation. The amount of time needed depends on program complexity and system size. Many programs have taken a year or more to develop.

Evaluation

One of the first and most significant conclusions emerging from this study and supported in research efforts commissioned by the United States Office of Education (Marland) is that evaluation is a crucial yet

neglected area in need of a systematic and organized effort for improvement. The two major areas of evaluation are: a) assessment of student progress, and b) measurement of program success.

Student Evaluation. The gifted student is vulnerable because the traditional evaluation system often does not accommodate his/her peculiarities. Even though school systems attempt to offer a differentiated curriculum to meet the needs of the gifted, they are caught in a larger context of achievement evaluation and reporting. The traditional system requires a ranking of our students upon which is based scholarships, university entrance and hiring practices.

Often the projects that gifted children select to investigate are far more complex and time consuming than those projects selected by the average student, but this difference is not reflected by the grading and may even work to the disadvantage of the gifted child if he/she is unable to complete the work in a given period of time or with various resource constraints.

If the gifted are grouped together for instruction, they are usually ranked again. That is, the reporting mechanism is static even though the norm has changed. All of these students would probably score above the average but the teacher does not give them all "A" grades. The differences in individuals demand that some students receive "B" or "C". Yet how is this to be interpreted by an awards committee having applicants from a variety of institutions or a university trying to make distinctions for those seeking advance standing or admission to quota

faculties? Formative evaluation procedures are not always adequate in providing feedback to the learner, his/her parents and the school system.

The nature of giftedness places some additional emphasis on evaluation. While school districts seeks to identify the gifted, the validity and reliability of tests for this group are questionable. There is a ceiling on tests normed on a general population which prevents the gifted child from being evaluated as superior. Many tests do not measure the higher thought processes, originality, problem solving and unique understandings of the gifted. Such tests may even confuse the child who can perceive relationships between the question and possible answers that the test authors have not expected. While there are several evaluation models based on process and product, each has advantages and disadvantages and none is infallible. Teacher tests, long held to be the most reliable evaluation instrument, come up for debate with the gifted. There are questions relating to the appropriateness of curriculum for the gifted and whether students should be evaluated on a standard curriculum or on mastery of advanced concepts or both, to say nothing about the teacher inexperienced in working with the gifted.

Program Evaluation. Program evaluation is much less elaborate than student evaluation. It seems that program establishment is considered a sufficient evaluation mechanism, and there is a lack of incentive to evaluate for improvement or to measure progress against objectives. It seems also that program evaluation is based more on a survey of

attitudes than on achievement of objectives. It is worth noting that the experience of the evaluator seems to be a major factor in the degree of sophistication of program evaluation.

Are programs for gifted students worthwhile? This is difficult to answer, but program proliferation throughout the world may be a pragmatic response. Generally speaking, programs for the gifted are viewed positively by students, parents and educators. Even with the current economic recession (and the likelihood in the United States that many state coordinators for the gifted will be released or given additional responsibilities) programs for the gifted are expected only to encounter minor modification. It seems that these programs are now an integral part of educational systems. Therefore education authorities must endeavor to discover the role of the school in educating the gifted and seek answers to the many questions posed.

Implications

This study provided an opportunity to review current theoretical constructs, sample the opinions of specialists and practitioners and observe current practices in order to share insights with those interested in developing programs for the gifted. The implications have been grouped according to those stakeholder groups most affected and then categorized for emphasis. There is overlap in some of the implications since they may apply to more than one stakeholder group or even cut across categories. It is hoped that these may be helpful to all who are interested in establishing and assisting with programs for the gifted.

Implications for School Jurisdictions

1. Definition and identification.
    a. All stakeholders (parents, school board administration and teachers in the program as well as throughout the system) need to hold a common concept of giftedness.
    b. There is need for an attitude of open-endedness about the nature of giftedness. The program should have neither the appearance nor the reality of a closed system. Periodic and continuing discussion is necessary to maintain ongoing reappraisal of the program, identification of the potentially gifted, curricular revitalization, and parental observation as a source of continuous stimulation to all aspects of the program. Another

benefit of open-endedness will be a continuing review of research findings.

c. School jurisdictions should generate their own working definition of giftedness. While it likely will never be possible to be definitive about the nature of giftedness, the establishment of a working definition will help to ensure that the program will at least be responsive to local wishes.

d. Students and parents need to be well aware that not all types of exceptionality are served by the school system. This could prevent some psychic damage to those students who believe they are also exceptional in some way.

e. Identification processes need to encompass both "gifted" and "potentially gifted" students (the distinction is not always readily apparent) and to address the multiple nature of giftedness. Gifted adults are identified by society on the basis of their products or productivity; rarely is it possible to use products of an extraordinary kind to identify gifted students because the products usually come later in life. Yet if the schools and parents are to provide effective opportunity to potentially gifted students, someone must judge the potential and prescribe the curriculum before the products are available.

2. Administration and support systems.

a. While it is not necessary to expend large amounts of money to accommodate the gifted, school systems operating or planning special programs for the gifted should plan for adequate resource development to meet specific needs.

b. Since administrative structures should support and complement the curriculum and delivery system, school systems should consider both the short-term and long-term organizational framework required.

c. Since teachers of the gifted find it difficult to operate in isolation, support personnel, especially counsellors for the gifted student, should be given ample consideration in the planning.

d. Since program success was often found to be dependent on the amount of forethought prior to implementation, adequate lead-time for planning, organizing, communicating to all stakeholder groups and inservicing should be built into each program proposal.

3. Teacher selection.

a. Since teacher selection is vital to program prosperity, school jurisdictions should do all within their power to procure the names of those who are interested and qualified to teach the gifted and then carefully select from the pool of applicants.

4. Curriculum.

a. Since curriculum needs to be adapted to the special needs of the gifted learner, there should be adequate provision for teachers to learn the necessary curriculum building skills in both preservice and inservice settings.

b. Since there are numerous ways to organize for and deliver curriculum, school systems should carefully plan to meet the immediate and long-term goals and objectives of their locally developed programs.

c. Placing greater emphasis on visual and performing arts in curriculum development will assist teachers and provide opportunities for such gifts to be identified and developed in students.

5. Evaluation [program and student].

a. Since program evaluation is often weak, and in some instances nonexistent:

1) evaluation should be built into every conceived program, not only in the developmental stages but in periodic reviews after the program has been established.

2) resource personnel should be available to assist teachers with program evaluation and report dissemination.

6. Parental support.

a. Since many American districts and states found parental support to be paramount, there should be encouragement given to including parental involvement at both local and provincial levels. The potential of the gifted can best be developed through cooperation between school and home. Parents can be involved in developing identification procedures, assisting with curriculum delivery, and evaluating programs and students.

7. Inservice.

   a. Since inservice has proven vital to teachers of the gifted and requires well-planned and financially supported programs, school jurisdictions must build inservice sessions into the program framework. There should also be provision for parent inservice sessions to direct the energies of those interested.

Implications for Alberta Education

1. Encouragement for program initiation and effort coordination.

   a. In the United States, program initiation, maintenance and quality were often a result of state education authority involvement, and the lack of widespread success of programs in the Canadian provinces seems attributable to a deficiency in such support. Therefore, Alberta Education should consider the organizational framework necessary to assist local school systems in establishing and maintaining quality programs for the gifted.

   b. Since identification of the gifted is crucial to program success, an inventory of qualified individuals available to assist school jurisdictions, including expert consultants in measurement, should be prepared and distributed throughout the province and a list of reliable and valid measurement instruments and devices should be provided to school jurisdictions.

   c. Since there can be a great amount of duplication of effort in curriculum building, Alberta Education should give consideration to ways of encouraging and supporting curriculum development,

dissemination of curriculum building information, assessing curriculum materials and providing relevant information to teachers.

d. Because educating the gifted is quite new in Alberta, periodic communications noting items of importance in identification and curriculum matters should be sent to school systems.

2. Finance.

a. In order to ensure continuance of education for the gifted there should be:

1) development of short-term and long-term policies both provincially and locally that provide a dependable source of funds to begin and maintain programs. (Extra start-up money is necessary as an incentive for increasing the number of programs in the province.)

2) adequate funding to encourage research in program and student evaluation.

3) an investigation of ways to encourage basic and developmental research for program expansion.

4) encouragement for local school boards to seek other sources of funding such as donations from foundations, local businesses and industries, and interested individuals. (This might be accomplished through a matching grant system from the provincial government.)

5) an investigation to determine which federal or provincial government agencies and which private businesses engaged in

public education might contribute toward special projects for the gifted. (In the United States and other countries, such non-educational institutions provide substantial resources for education in the visual and performing arts.)

3. Evaluation [student and program]

   a. Student evaluation seemed to be an area needing more investigation and standardization. Therefore:

      1) longitudinal studies of student academic achievement extending into career achievement should be undertaken to determine whether programs for the gifted have an adequate pay-off.

      2) there is need for constant evaluation procedures combined with an exchange of information among program coordinators. (Each project needs to have an assessment of how student evaluation affects the program and its participants.)

   b. There is a need for Alberta Education to help school jurisdictions work together to suggest strategies and evaluation designs appropriate for assessing the value of programs for the gifted.

4. Specialized curricula.

   a. Since specific attention to the role of visual and performing arts in educating the gifted has generally been neglected, an assessment should be made of the adequacy of current provisions for such students in Alberta. There should be some exploration

of the concept of "centers" where these students could receive professional assistance through workshops or courses of varying intensity and duration.

Implications for Universities

1. Teacher training.

   a. Since teacher training is important, universities should be encouraged to offer special courses to foster awareness of the gifted, provide preservice instruction and provide an avenue for advanced study.

2. Research.

   a. Because many questions are still unanswered with respect to prolonged performance of those identified as gifted compared to those not accepted into programs for the gifted, developmental and basic research needs to be encouraged.

   b. Since research evidence is lacking, there is a need for universities to carry on studies in cooperation with school systems to either confirm or refute Robinson's claim that giftedness is merely precocity.

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